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BC 733

HANDBOOK OF
OPERATING INSTRUCTIONS
for
RADIO RECEIVING EQUIPMENT
RC-103-A or RC-103-AZ

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16 JULY 1943

PART No. C-215771-5

B.C. 733-D PRODUCTION TEST DATA SHEET

Date— 3-31-44
Work Tag No.— 8497
Serial No.— 8554
Dynamotor. Serial—

image 3481

Bias Oscillator Voltage	(110 volts min.)	120	Volts
I.F. Sensitivity	(25 UV max.)	13	Microvolts
I.F. Bandwidth—2x down	(N.L.T. 110 K.C.)	156	Kilocycles
Mid band frequency	(6.9 MC. ± 6 K.C.)	6998	Kilocycles
I.F. Bandwidth-1000x down	(N.G.T. 450 K.C.)	322	Kilocycles
Crystal output at "U"—108.3 MC.	(N.L.T. 18 Microamperes)	35	Microamps.
Crystal output at "V"—108.7 MC.	(N.L.T. 18 Microamperes)	3[illegible]	Microamps.
Crystal output at "W"—109.1 MC.	(N.L.T. 18 Microamperes)	32	Microamps.
Crystal output at "X"—109.5 MC.	(N.L.T. 18 Microamperes)	36	Microamps.
Crystal output at "Y"—109.9 MC.	(N.L.T. 18 Microamperes)	48	Microamps.
Crystal output at "Z"—110.3 MC.	(N.L.T. 18 Microamperes)	36	Microamps.
R.F. Sensitivity at "U"—108.3 MC.	(5 Microvolts max.)	182	Microvolts
Signal to noise ratio at "U"—108.3 MC.	(N.L.T. 12 DB. pwr. ratio)	17	DB.
R.F. Sensitivity at "V"—108.7 MC.	(5 Microvolts max.)	182	Microvolts
Signal to noise ratio at "V"—108.7 MC.	(N.L.T. 12 DB. pwr. ratio)	16	DB.
R.F. Sensitivity at "W"—109.1 MC.	(5 Microvolts max.)	180	Microvolts
Signal to noise ratio at "W"—109.1 MC.	(N.L.T. 12 DB. pwr. ratio)	17	DB.
R.F. Sensitivity at "X"—109.5 MC.	(5 Microvolts max.)	180	Microvolts
Signal to noise ratio at "X"—109.5 MC.	(N.L.T. 12 DB. pwr. ratio)	18	DB.
Balance-Antenna Circuit (Voltage ratio)	(N.L.T. 100:1)	100:1	Ratio
R.F. Sensitivity at "Y"—109.9 MC.	(5 Microvolts max.)	182	Microvolts
Signal to noise ratio at "Y"—109.9 MC.	(N.L.T. 12 DB. pwr. ratio)	18	DB.
R.F. Sensitivity at "Z"—110.3 MC.	(5 Microvolts max.)	186	Microvolts
Signal to noise ratio at "Z"—110.3 MC.	(N.L.T. 12 DB. pwr. ratio)	16	DB.
Maximum course sensitivity	(N.L.T. 32 Microamperes)	32+	Microamps.
Balance—25 Microamp to Min. sensitivity setting	(±8 Microamperes)	-1	Microamps.
Minimum course sensitivity	(3 to 10 Microamperes)	4	Microamps.
Balance—1000 to 20 microvolts input	(N.G.T. ±6 Microamperes)	+3	Microamps.
Balance—1000 to 100,000 microvolts input	(N.G.T. ±6 Microamperes)	+2	Microamps.
A.V.C. at "X"—109.5 MC.—1000 Microvolts input	("A")	16.5	DB.
A.V.C. at "X"—109.5 MC.—20 Microvolts input	("A"—1 DB. max.)	16.	DB.
A.V.C. at "X"—109.5 MC.—10,000 Microvolts input	("A"+1 DB. max.)	17.5	DB.
A.V.C. at "X"—109.5 MC.—100,000 Microvolts input	("A"+1 DB. max.)	17.5	DB.
Set to 10 Microampere course sensitivity		Check— ✓	

S.C. Observer
Crosley Inspector E-33

[illegible] 100.7 MC.	(M.L.I. 18 Microamperes)		M
[illegible]	[illegible]	30	[illegible]

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16 JULY 1943

Published under joint authority of the United States War and Navy Departments and the Air Council of the United Kingdom

UNSATISFACTORY REPORT

FOR U. S. ARMY AIR FORCE PERSONNEL:

In the event of malfunctioning, unsatisfactory design, or unsatisfactory installation of any of the component units of this equipment, or if the material contained in this book is considered inadequate or erroneous, an Unsatisfactory Report, AAF Form No. 54, or a report in similar form, shall be submitted in accordance with the provisions of Army Air Force Regulation No. 15-54, listing:

1. **Station and organization.**
2. **Nameplate data (type number or complete nomenclature if nameplate is not attached to the equipment).**
3. **Date and nature of failure.**
4. **Airplane model and serial number.**
5. **Remedy used or proposed to prevent recurrence.**
6. **Handbook errors or inadequacies, if applicable.**

FOR U. S. NAVY PERSONNEL:

Report of failure of any part of this equipment during its guaranteed life shall be made on Form N. Aer. 4112, "Report of Unsatisfactory or Defective Material," or a report in similar form, and forwarded in accordance with the latest instructions of the Bureau of Aeronautics. In addition to other distribution required, one copy shall be furnished to the inspector of Naval Material (location to be specified) and the Bureau of Ships. Such reports of failure shall include:

1. **Reporting activity.**
2. **Nameplate data.**
3. **Date placed in service.**
4. **Part which failed.**
5. **Nature and cause of failure.**
6. **Replacement needed (yes-no).**
7. **Remedy used or proposed to prevent recurrence.**

FOR BRITISH PERSONNEL:

Form 1022 procedure shall be used when reporting failure of radio equipment.

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DESTRUCTION OF ABANDONED MATERIEL IN THE COMBAT ZONE

In case it should become necessary to prevent the capture of this equipment and when ordered to do so, DESTROY IT SO THAT NO PART OF IT CAN BE SALVAGED, RECOGNIZED OR USED BY THE ENEMY. BURN ALL PAPERS AND BOOKS.

Means:

1. Explosives, when provided.
2. Hammers, axes, sledges or whatever heavy object is readily available.
3. Burning by means of incendiaries such as gasoline, oil, paper or wood.
4. Grenades and shots from available arms.
5. Where possible, and when time permits, bury all debris or dispose of it in streams or other bodies of water.

Procedure:

1. Obliterate all identifying marks. Destroy nameplates and circuit labels.
2. Demolish all panels, castings, switch- and instrument-boards.
3. Destroy all controls, switches, relays, connections and meters.
4. Rip out all wiring in electrical equipment. Smash gas, oil and water cooling systems in gas-engine generators, etc.
5. Smash every electrical or mechanical part whether rotating, moving or fixed.
6. Break up all operating instruments such as keys, phones, microphones, etc.
7. Destroy all classes of carrying cases, straps, containers, etc.

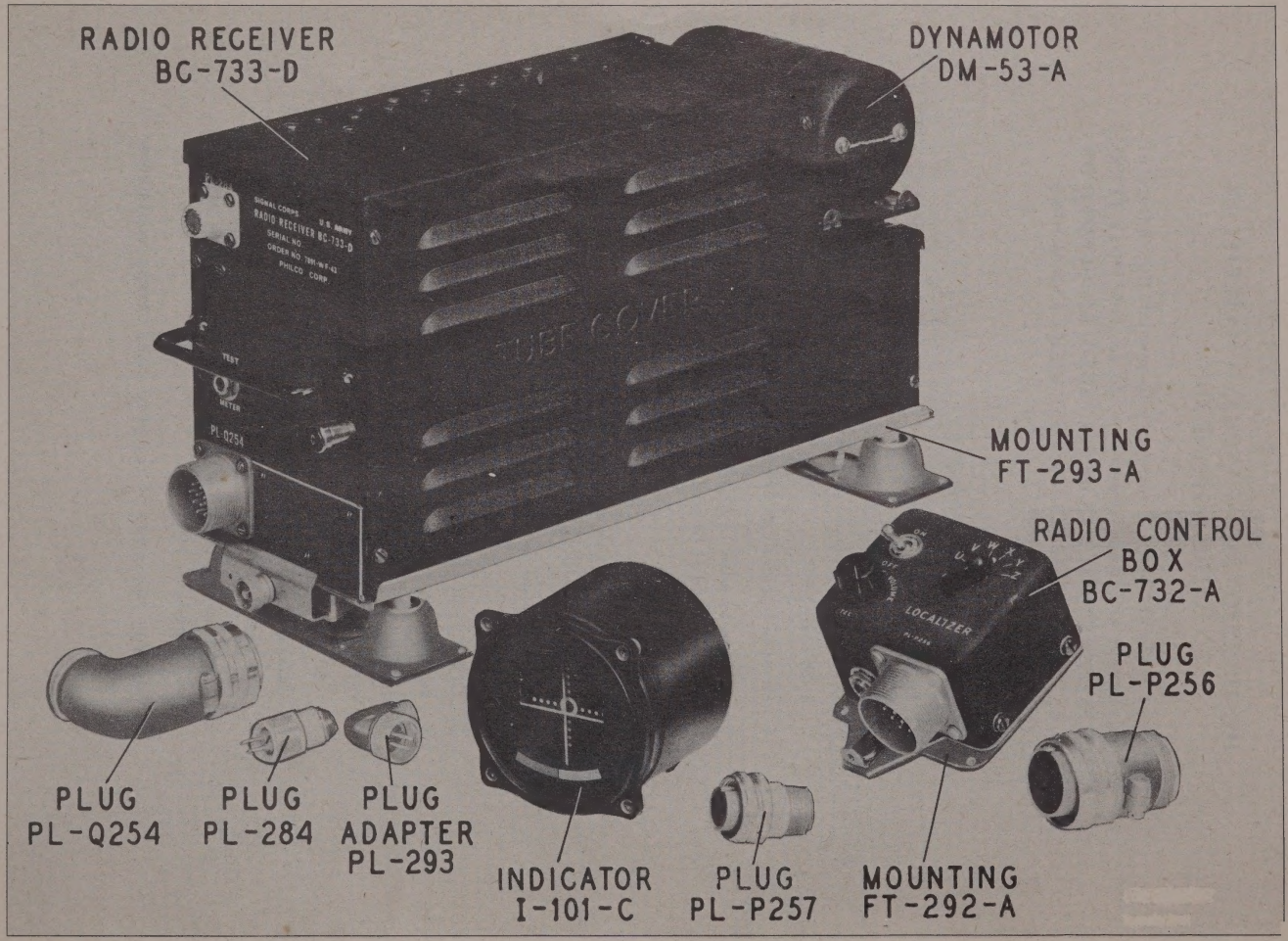


*Figure 1—Principal Components of Radio Receiving Equipment RC-103-A**

*See Special Notice, page 1.

HANDBOOK OF

OPERATING INSTRUCTIONS

for

RADIO RECEIVING EQUIPMENT

RC-103-A or RC-103-AZ

SPECIAL NOTICE

To facilitate reference to Radio Receiving Equipments RC-103-A and RC-103-AZ in this handbook, only the former is referred to in the text and is shown in the illustrations, except where otherwise noted, as the two equipments are electrically and mechanically identical except with respect to supply voltage.

SECTION I

GENERAL DESCRIPTION

1. INTRODUCTION.

a. This handbook covers the installation and operation of Radio Receiving Equipment RC-103-A or RC-103-AZ. Complete information is contained in the *Handbook of Maintenance Instructions for Radio Receiving Equipment RC-103-A or RC-103-AZ* which is issued to branches responsible for the maintenance of this type of equipment. Repairs not covered are to be made only by personnel trained in the servicing and maintenance of this equipment.

b. Radio Receiving Equipment RC-103-A* is an airborne radio equipment used in locating a runway on a landing field during landing operations. Signals received from a transmitter located at one end of the runway are applied to an indicator. The indicator shows whether the airplane in which the receiving equipment is installed is in line with, to one side, or to the other side of the runway. A radio receiver furnishes an audio tone to enable the operator to hear the transmitter signal.

c. Operation is secured at six frequencies, namely, 108.3, 108.7, 109.1, 109.5, 109.9 and 110.3 megacycles.

d. Radio Receiving Equipment RC-103-A requires a 28-volt d-c power source. Radio Receiving Equipment RC-103-AZ requires a 14-volt d-c power source.

* See Special Notice above.

2. COMPONENT PARTS.

a. LIST OF COMPONENT PARTS.

EQUIPMENT SUPPLIED

Quantity	*Name of Unit*	*Length*	*Width*	*Height*	*Weight (Lbs.)*
1	Radio Control Box BC-732-A	3"	3-9/32"	2⅝"	0.56
1	Mounting FT-292-A	4-1/32"	3-1/16"	1/16"	.07
1	Plug PL-P256 (for control box)				.106
1	Cable Clamp M-293 (used with Plug PL-P256)				
1	Dynamotor DM-53-A (28V) or Dynamotor DM-53-AZ (14V)	5"	2¾"	3-1/5"	2.9
1	Radio Receiver BC-733-D	13⅜"	5"	7-3/32"	19.2
1	Mounting FT-293-A	13¼"	5⅞"	1-7/32"	1.75
1	Plug PL-Q254 (for receiving unit)				0.16
1	Cable Clamp M-293 (used with Plug Q-254)				
2	Plug PL-284 (for antenna transmission line)				
1	Adapter PL-293 (right angle adapter for Plug PL-284)				0.10
1	Plug PL-P257 (for indicator)				
1	Cable Clamp M-284 (used with Plug PL-257)				
6	Crystal Unit DC-20 or Crystal Holder FT-243 (with crystals)				
3	Tube VT-269 (Commercial Type WE717A)				
2	Tube VT-209 (Commercial Type 12SG7)				
1	Tube VT-104 (Commercial Type 12SQ7)				
1	Tube VT-134 (Commercial Type 12A6)				
1	Tube VT-207 (Commercial Type 12AH7-GT)				
2	Tube VT-133 (Commercial Type 12SR7)				
1	Resistor RS-125 (to provide equivalent resistance when only one indicator is used) (1000 ohm, 0.5 watt)				
1	Antenna AN-100 or AN-100-A				
1	Cable WC-551-B (antenna transmission line)				
1	Indicator I-101-C or I-101-D (cross pointer instrument)				
1	Fuse (10 amp)				

The total weight of the radio receiving equipment is 24.8 pounds. The above weight figures apply to all equipments except those made by Philco Corporation. In the case of equipment made by Philco Corporation the individual weights of the above components will vary from the noted figures, the total equalling approximately 19.6 pounds.

* Note: Some receivers were issued with an old-type varistor and were labeled Radio Receiver BC-733-A. These receivers will have this varistor replaced by a new type and relabeled Radio Receiver BC-733-B.

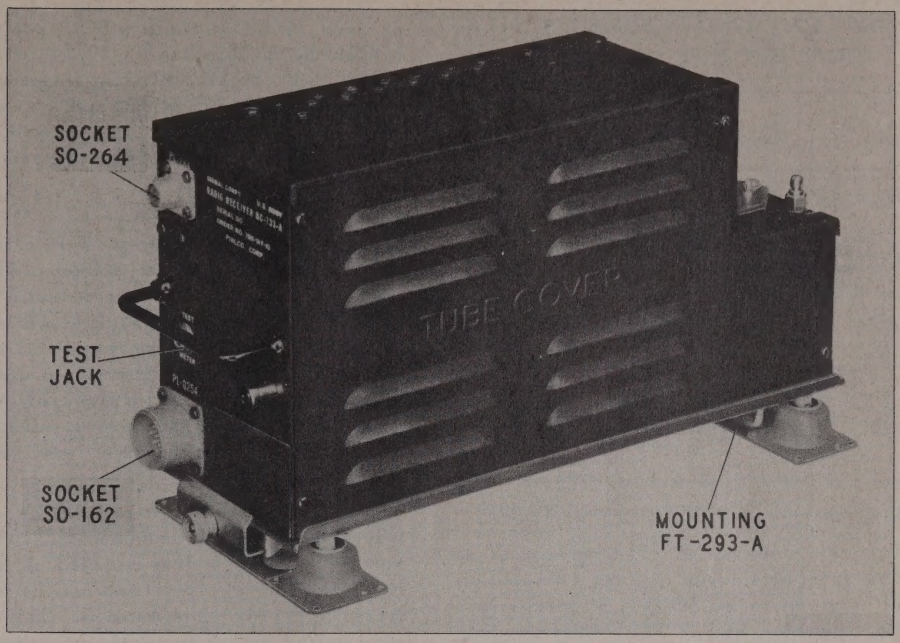


Figure 2—Radio Receiver BC-733-D

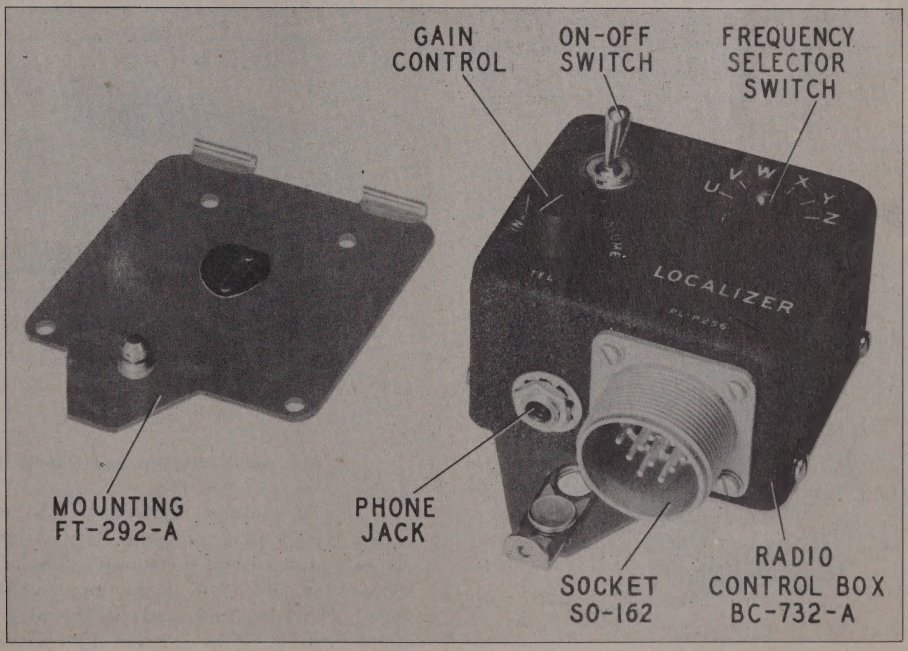


Figure 3—Radio Control Box BC-732-A

EQUIPMENT REQUIRED IN SOME INSTALLATIONS BUT NOT SUPPLIED

Quantity	*Name of Unit*	*Required Characteristics*
1 (additional)	Plug PL-293 (right-angle adapter)	
1 (additional)	Indicator I-101-C (for use in large aircraft co-pilot position)	
1 (additional)	Plug PL-P275 (for the indicator)	
1	Plug PL-275 (with two additional plugs PL-284). (For pressurized cabins)	

b. DESCRIPTION OF COMPONENT PARTS.

(1) Radio Receiver BC-733-D (Figure 2) is a ten-tube, super-heterodyne receiver. Located on the front panel are Socket SO-264, Socket SO-162, a ground connector, and a TEST METER jack. To gain access to the tubes remove the TUBE COVER on the right hand side of the receiver case. Dynamotor DM-53-A is mounted on the rear of the receiver case with slide fasteners. An eight-contact plug supplies the electrical connections to the dynamotor. The receiver is mounted on Mounting FT-293-A.

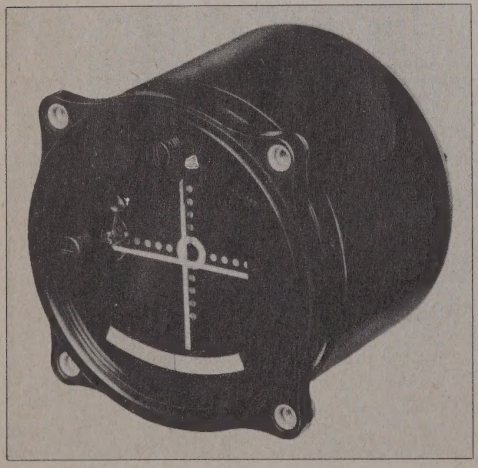


Figure 4—Indicator I-101-C

(2) Radio Control Box BC-732-A (Figure 3) is mounted on Mounting FT-292-A. It contains a phone jack, Socket SO-162, frequency selector switch, one ON-OFF switch, and a receiver audio gain control. This control box controls the receiving equipment and provides the audio output through the phone jack.

(3) Indicator I-101-C or I-101-D (Figure 4) has two pointers on it; one is a vertical pointer and the other is a horizontal pointer. The vertical pointer is used with the radio receiving equipment and indicates whether the airplane is directly in line with or to one side of the runway on the landing field. The horizontal pointer is not used with the equipment. However, if a similar type of glide-path-location radio equipment is used, the horizontal pointer of Indicator I-101-C or I-101-D will be employed.

(4) Dynamotor DM-53-A (Figure 5) is used with Radio Receiving Equipment RC-103-A for 28-volt d-c operation. It is mounted on the back of Radio Receiver BC-733-D and may be removed by loosening the four slide fasteners. This dynamotor supplies the high voltage for the receiver. Provisions are made in the plug of the dynamotor to connect the receiver for 28-volt d-c operation.

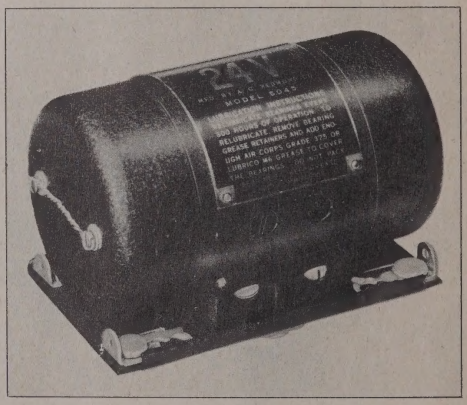


Figure 5—Dynamotor DM-53-A

(5) Dynamotor DM-53-AZ is used with Radio Receiving Equipment RC-103-AZ for airplanes with a 14-volt d-c supply. Use it instead of Dynamotor DM-53-A if the input voltage is 14 volts. Provisions are made in the plug of Dynamotor DM-53-AZ to connect the receiver for 14-volt operation.

SECTION II

INSTALLATION AND ADJUSTMENT

1. INSTALLATION.

a. GENERAL INSTALLATION. — Radio Receiving Equipment RC-103-A is designed for maximum flexibility in various installations. Radio Receiver BC-733-D is mounted on a shockproof Mounting FT-293-A which is permanently attached to the aircraft structure when the equipment is first installed. Radio Control Box BC-732-A is mounted on Mounting FT-292-A. Both units are easily removed from their mounting.

b. INSTALLATION POSITIONS.

(1) Install Indicator I-101-C or I-101-D near the pilot in a position where he can easily see it from his operating position.

(2) Install Radio Control Box BC-732-A near the pilot or operator so that he can easily reach it from his operating position.

(3) Locate Radio Receiver BC-733-D anywhere in the airplane, allowing adequate clearances to permit ready removal and installation of the receiver and associated cords and plugs, and to permit free movement of the receiver on its shock-absorber mountings. Obtain clearances from the dimensions diagram, Figure 6.

(4) Determine the exact locations of the various units according to information furnished by the proper authorities.

2. CABLING.

a. GENERAL CABLING PROCEDURE.

(1) If the cords which interconnect the various units of the radio receiving equipment are not in metal conduit, lash or clamp them along the length of the structural members of the airplane. If the cords are covered with bare, metal braid, take precautions to insure that this braid does not come into intermittent rubbing or touching contact with metal parts of the airplane structure, because such contacts are potential sources of noise. Wherever this braid is close to the metal structure of the airplane, securely clamp or bond it in place. The distance between supports should never exceed 18 inches. Cover the portions of the cords between bondings with friction tape or other insulating material to insure freedom from intermittent contacts.

(2) Connect the cord from the junction box to the battery, or as near to the battery terminals as possible. If the power cable for the radio receiving equipment must be connected to another power cable, attach to a cable on the load side of the battery rather than to one on the charging side. This reduces noise from the charging circuit and unduly large fluctuations in primary voltage.

(3) The wires in the primary supply cabling should carry 3.5 amperes with not more than 0.5 volt drop between the battery and the socket on the radio receiver.

(4) The wire connections, between the terminals of the various plugs, are given in Figure 11.

b. DETAILED CABLING PROCEDURE. — When assembling cables proceed as follows:

(1) Cut the cable wires to a sufficient length to provide slack. This prevents strain at the plug terminals.

(2) Do not remove any more insulation from the ends of the wire than is required for soldering the wire to the terminals.

(3) Avoid the use of excess solder and sharp points of solder on the plug terminals; this reduces the space between terminals and plug shells.

(4) Use only rosin flux solder when soldering wires to terminals.

CAUTION

Do not use any flux which is corrosive.

(5) Clean connections before soldering and remove excess solder from the solder connections.

c. CABLE CONNECTIONS.

CAUTION

Do not plug any cables into the units until sure that the ON-OFF switch on Radio Control Box BC-732-A is in the OFF position.

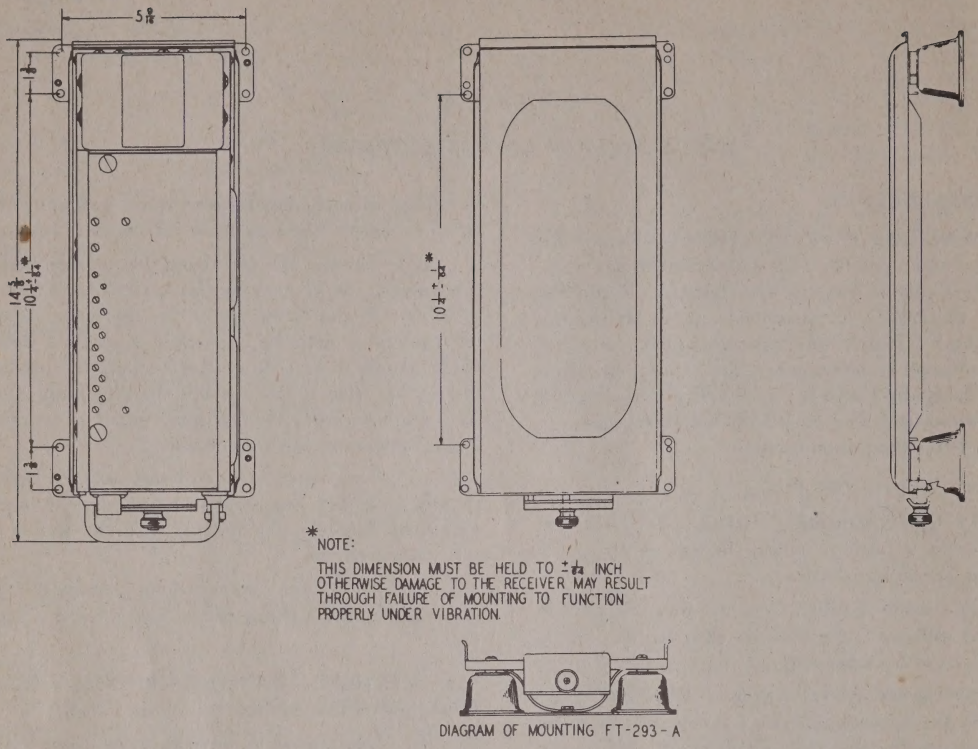
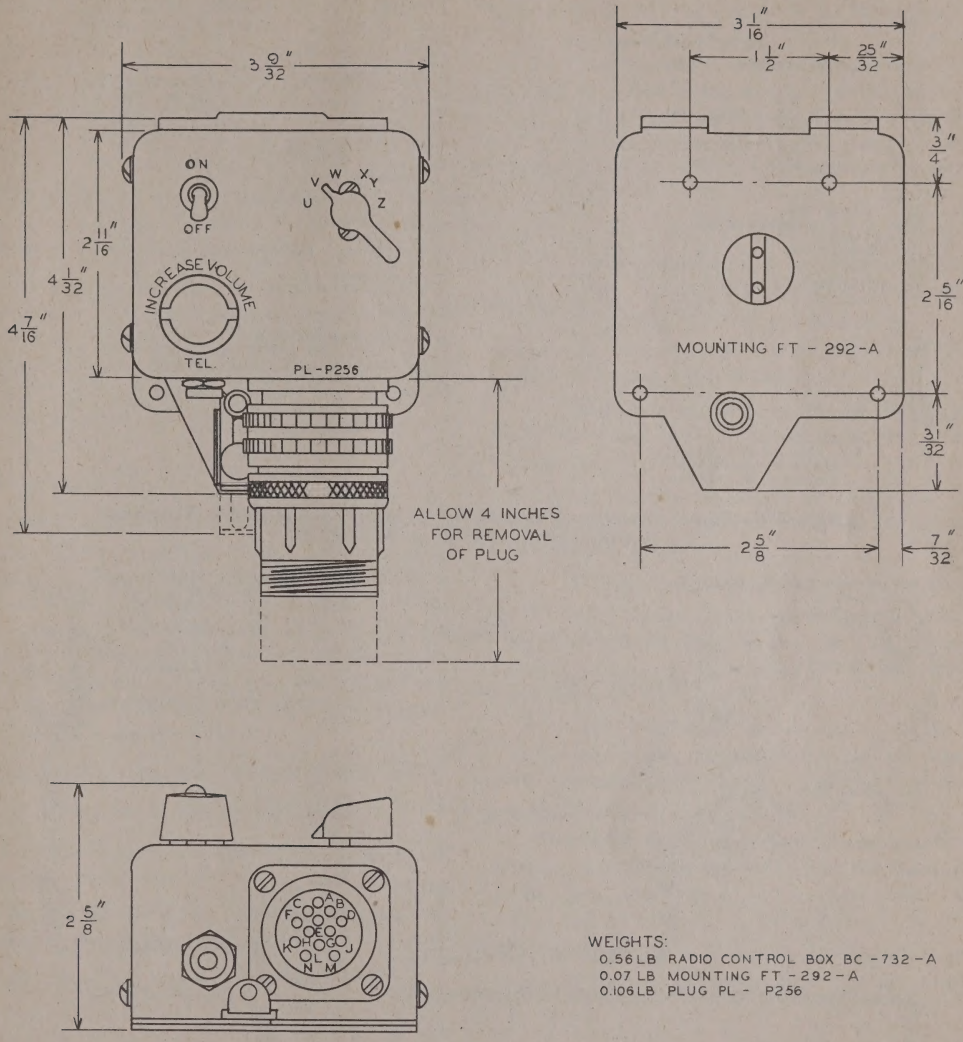

NOTE:
THIS DIMENSION MUST BE HELD TO ± 1/64 INCH OTHERWISE DAMAGE TO THE RECEIVER MAY RESULT THROUGH FAILURE OF MOUNTING TO FUNCTION PROPERLY UNDER VIBRATION.
DIAGRAM OF MOUNTING FT-293-A
ALLOW 1/2 IN. ON EACH SIDE FOR MOVEMENT OF RECEIVER
ALLOW 3/16 AT EACH END FOR MOVEMENT OF RECEIVER
ALLOW 7 1/4 IN MINIMUM FOR REMOVAL OF RECEIVER FROM MOUNTING
ALLOW 2 3/8 IN. FOR REMOVAL OF PLUG
ALLOW 4 INCHES FOR REMOVAL OF PLUG
TUBE COVER
TEST
METER
PL-254
PL-Q254

Figure 6—Installation Dimension Diagram for Radio Receiver BC-733-D and Mounting FT-293-A



WEIGHTS:
0.56 LB RADIO CONTROL BOX BC-732-A
0.07 LB MOUNTING FT-292-A
0.106 LB PLUG PL-P256

Figure 7—Installation Dimension Diagram for Radio Control Box BC-732-A and Mounting FT-292-A

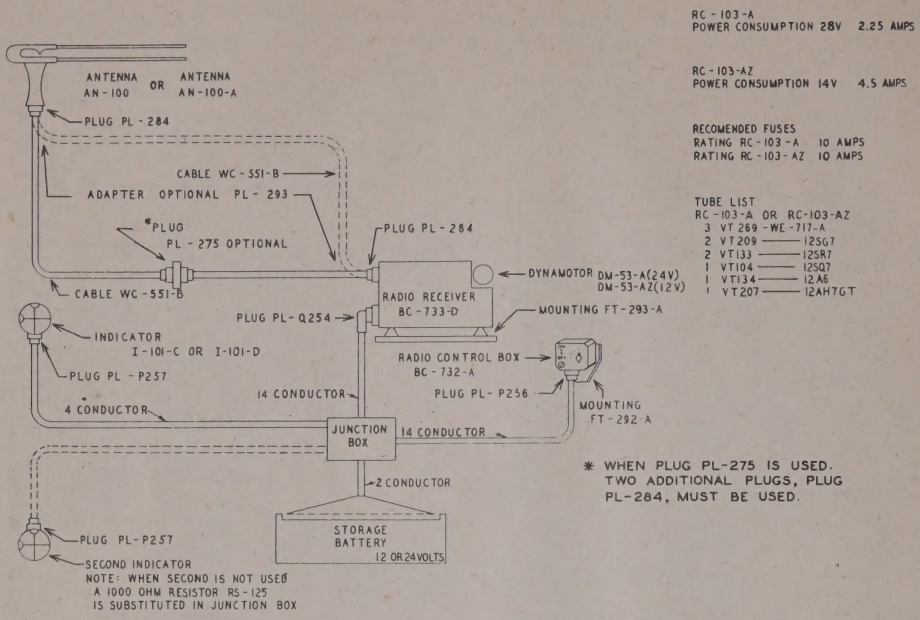


Figure 8—Interconnecting Diagram for Components of Radio Receiving Equipment RC-103-A or RC-103-AZ

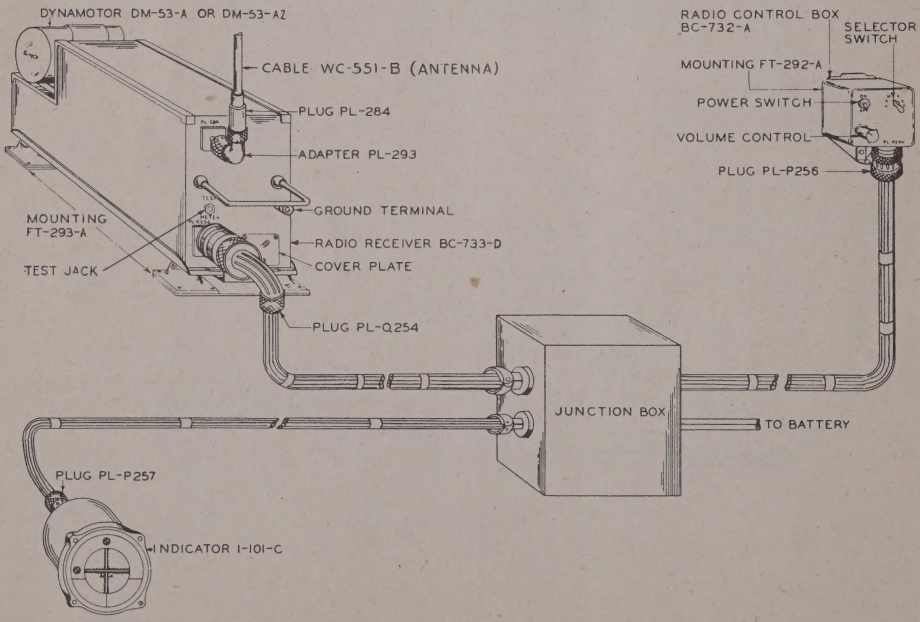


Figure 9—Cording Diagram

(1) The cable connections between units are illustrated in the interconnecting diagram, Figure 8 and the cording diagram, Figure 9.

(2) Check each cable (cable interconnections between units) with the interconnecting diagram, Figure 8. Before connecting the cables, be sure that the plug markings agree with those on the units. Check that the key positions are properly located when the plugs are assembled (be sure that the correct male or female plug is adjacent to its matching part).

(3) Check the securing and bonding of cables. Check for intermittent contacts between the cable and metallic structure of the airplane.

(4) If an additional indicator is not used, install a 1000-ohm, ½-watt resistor, Resistor RS-125 (Figure 8 and Figure 11), in the junction box between terminal A of the indicator terminal strip and terminal E of the receiver terminal strip to match the output of the receiver.

3. ADJUSTMENT.

a. INSTALLATION INSPECTION.—Make an inspection of the radio receiving equipment after installation in the airplane. During this inspection, check the supply voltage of the airplane. If the power supply of the airplane is 14 volts d-c, use Dynamotor DM-53-AZ. When the power supply for the airplane is 28 volts d-c, use Dynamotor DM-53-A. After completing the installation inspection, make an operational check.

b. DETAILED INSTALLATION INSPECTION.

(1) Check the antenna connections.

(2) Check the cable connections. Tighten the knurled ring on the plugs.

(3) Check all cord connections, using the cording diagram, Figure 9, for reference.

(4) Check the fuse in the junction box.

c. OPERATIONAL CHECK.—To check the operation of the equipment, turn the set on and tune it to the runway transmitter. When the audio tone of the transmitter is heard, check the indicator for operation. If the airplane is in line with the runway, the indicator needle will be in the center position of the scale or ON COURSE. If the plane is to one side of the runway, the indicator needle will swing to the blue side of the scale. If the plane is on the other side of the runway, the indicator needle will swing to the yellow side of the scale. Check the radio equipment at all three positions as shown in Figure 10.

d. DETAILED OPERATIONAL CHECK.

(1) With headphones connected, turn the ON-OFF switch on the control box ON. The dynamotor should operate normally.

(2) Turn the audio gain control on the control box to mid-scale setting.

(3) Listen in the headphones. If no receiver noise is heard, remove the plate at the right side of the receiver and check the tubes.

(4) Set the frequency switch on the control box to the desired position and listen for the runway transmitter signal.

(5) Observe the indicator for deflection.

(a) If the airplane is in line with the runway of the landing field, the vertical pointer should be in the center or ON COURSE position on the indicator scale.

(b) If the airplane is to one side of the beam which marks the runway (150 cycles modulation), the vertical pointer should be in the blue scale of the indicator.

(c) If the airplane is to the other side of the beam which marks the runway of the landing field (90 cycles modulation), the vertical pointer should be in the yellow scale of the indicator.

(6) Check the indicator for operation at both sides of the runway and in line with the runway.

SECTION III

OPERATION

1. GENERAL OPERATION.

a. Radio Receiving Equipment RC-103-A is installed in aircraft to receive signals transmitted by a localizer transmitter as an aid to instrument landing. The output of Radio Receiver BC-733-D is indicated by the vertical pointer of Indicator I-101-C or I-101-D. In all instances the needle of the indicator will point to the color area over which the plane is located (see Figure 10). When an incoming plane is to the right of the runway or landing area, the receiving equipment will pick up the signal modulated at 150 cycles per second, and the indicator needle will swing to the left or "blue area." Thus with the plane coming into the transmitter, the pilot need merely "follow the needle" to correct his horizontal position with respect to the runway. In flying away from the transmitter the reverse will be true; i.e., his corrections must be in a direction opposite to which the needle points. The audio signal (or signals) in the headphones is of no material aid in landing the plane.

b. No attempt will be made in this manual to describe the flying procedures necessary to locate the localizer course. Reference is made to Techincal Order No. 30-100F-1.

2. DETAILED OPERATION PROCEDURE.

a. Approximately 20 minutes before the runway or landing area is approached, turn the ON-OFF switch on Radio Control Box BC-732-A to the ON position. This will give the receiver a chance to warm up.

b. Turn the FREQUENCY SELECTOR switch to the desired position. The frequency of the localizer transmitter must be known, either by communication with the ground or by consulting the radio facilities charts.

c. If the plane has an interphone system, turn the control switch on the interphone box to COMMAND position. When the plane has no interphone system, the audio output at the radio receiver is connected directly to the command set.

d. Adjust the volume to a comfortable hearing level by means of the INCREASE VOLUME knob on the radio control box.

e. Observe the vertical pointer on the indicator. When the aircraft is coming into the transmitter on the front course, the vertical needle will point in the direction toward which the heading of the airplane should be corrected. When the aircraft is directly in line with the runway, the vertical needle will be centered. A deviation of ¼-scale deflection to right or left of center is not too great for a successful landing. When the vertical pointer is more than ¼-scale off center, corrections in the airplane direction of travel should be made very slowly so that the aircraft will not overshoot the localizer path. See Technical Order No. 30-100-F-1 for flying instructions.

f. After landing turn the ON-OFF switch to the OFF position.

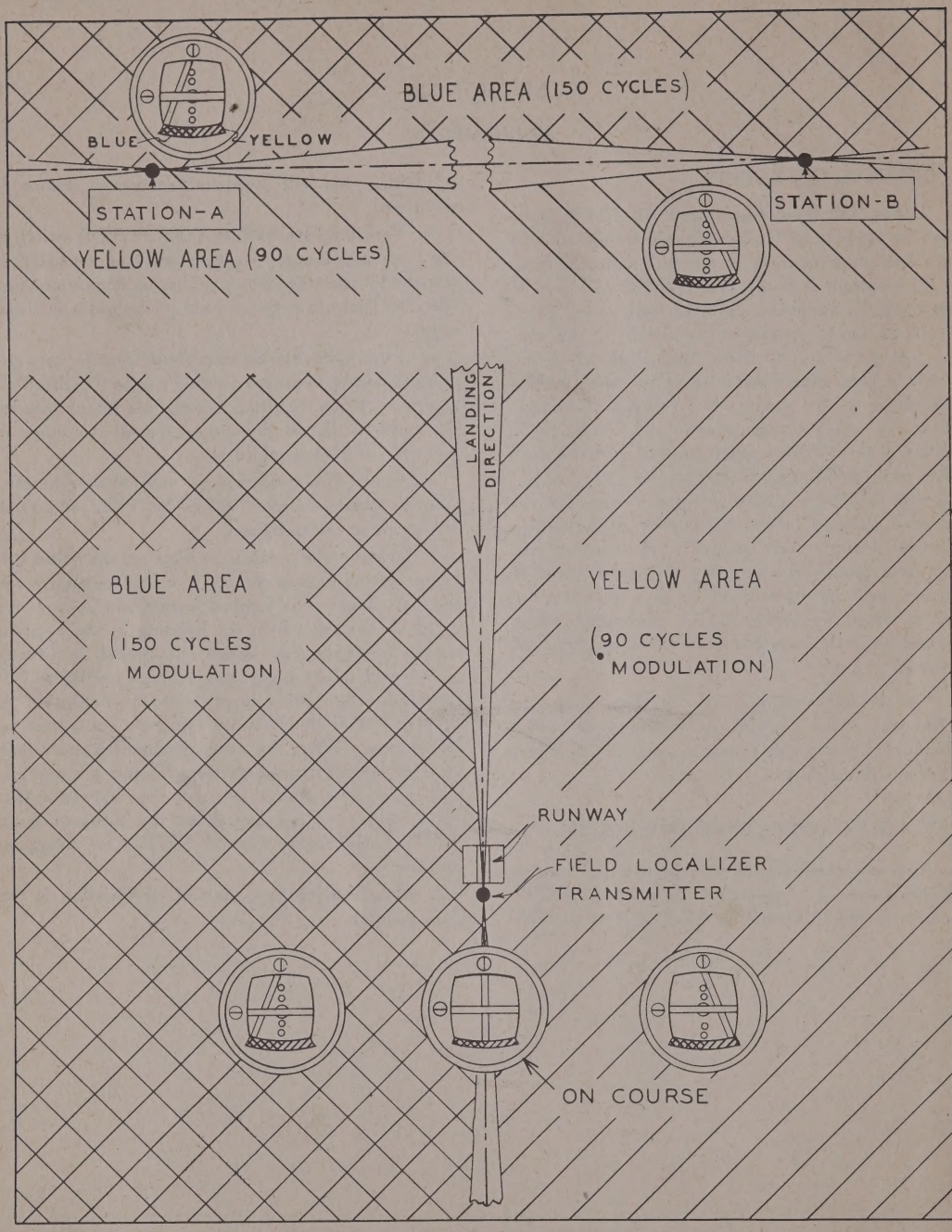
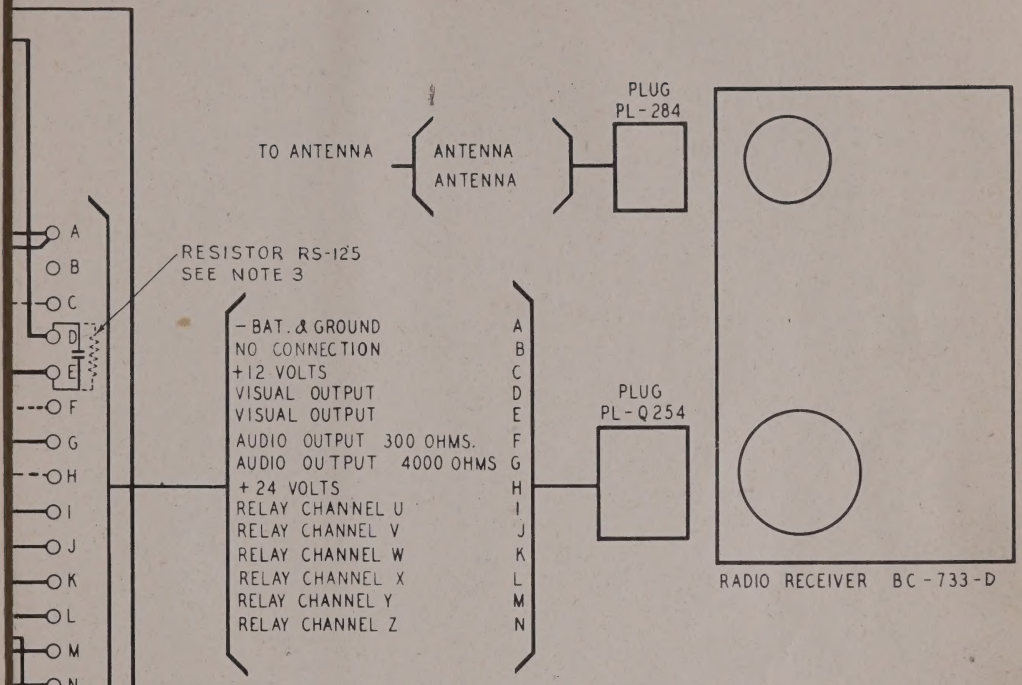


Figure 10—Operational Chart

SECTION IV

EMERGENCY REPAIR DURING FLIGHT

Observation	*Trouble*	*Remedy*
Receiver completely dead.		ON-OFF switch on Radio Control Box BC-732-A should be ON.
		Check all cords and plugs.
		Check fuse in junction box.
Receiver operates but insensitive.		Check antenna conections. CAUTION: DO NOT TAMPER WITH THE "SENSITIVITY" OR "CENTERING" CONTROLS ON THE FRONT OF THE RECEIVER.
Receiver operates but noisy.	Intermittent contact in headphones or headphone cord and plug.	Replace headphone cord.
	Generator noise appears at the point where the generator cuts in. If the noise is in the generator, it will be typical machine noise. If it is in voltage regulator, it will be intermittent and only appear above a critical engine speed.	Open the switch that connects the generator to the batteries.
Receiver sounds normal but Indicator I-101-C or I-101-D does not work.		Check indicator plug.
Receiver indicator works but audio channel is dead.		Replace headphones and cord.
		Check command receiver.



NOTES:

1. CONNECT TERMINAL "G" ON PLUG PL-P256 OF RADIO CONTROL BOX BC-732-A TO TERMINAL "G" ON PLUG PL-Q254 FOR 4000 OHM OUTPUT TO MATCH HIGH IMPEDANCE HEADPHONES.

   CONNECT TERMINAL "G" ON PLUG PL-P256 OF RADIO CONTROL BOX BC-732-A TO TERMINAL "F" ON PLUG PL-Q254 FOR 300 OHM OUTPUT TO MATCH LOW IMPEDANCE HEADPHONES.

2. CONNECT TERMINAL "H" OF PLUG PL-P256 OF RADIO CONTROL BOX BC-732-A TO TERMINAL "H" OF PLUG PL-Q254 ON RECEIVER FOR 28 VOLT OPERATION.
   CONNECT TERMINAL "H" OF PLUG PL-P256 OF RADIO CONTROL BOX BC-732-A TO TERMINAL "C" OF PLUG PL-Q254 ON RECEIVER FOR 14 VOLT OPERATION.

3. RESISTOR RS-125 IS USED ONLY WHEN ONE INDICATOR I-101-C OR I-101-D IS INSTALLED.

Figure 11—Installation Cording Diagram

RESTRICTED
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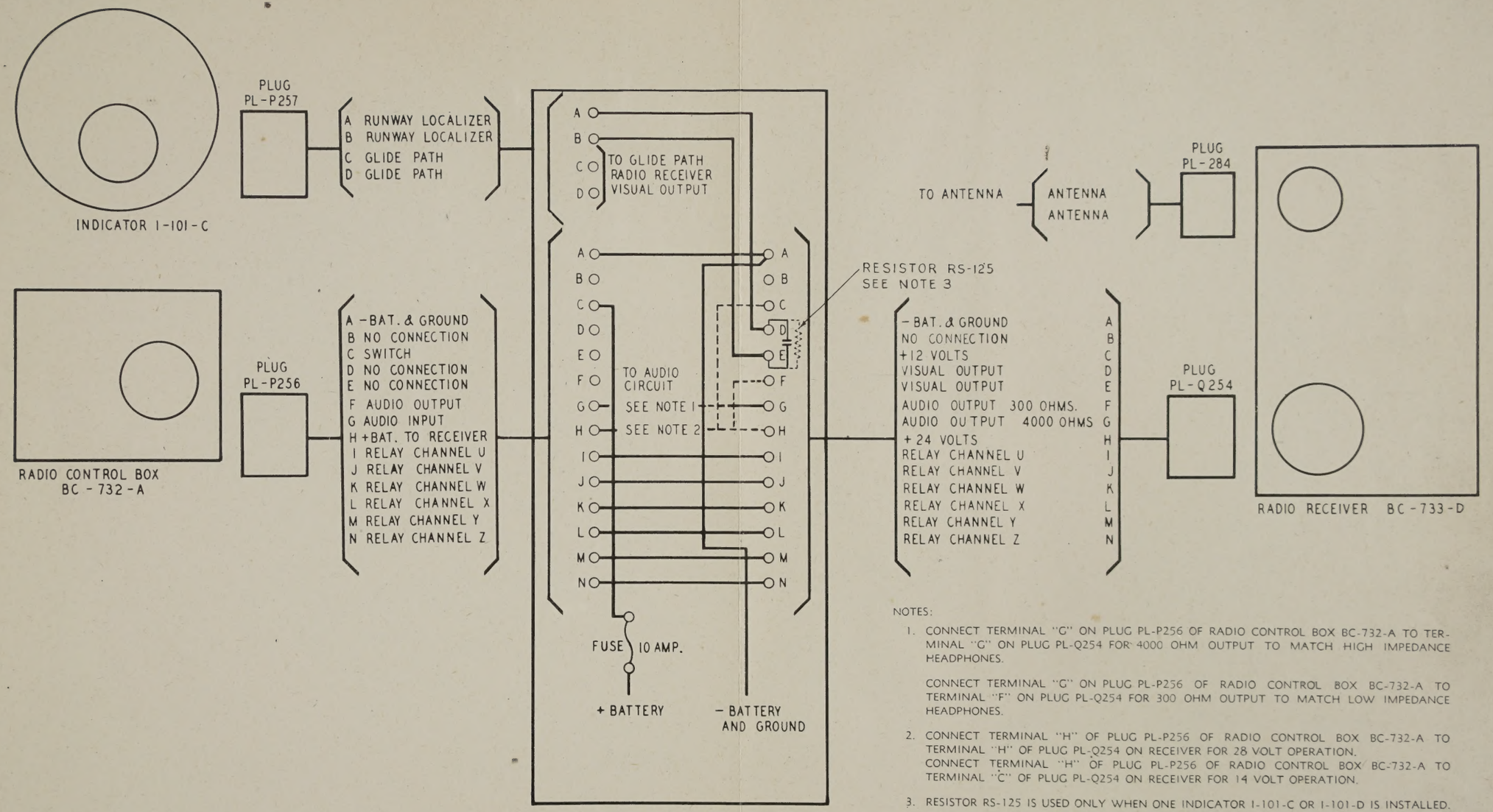


NOTES:

1. CONNECT TERMINAL "G" ON PLUG PL-P256 OF RADIO CONTROL BOX BC-732-A TO TERMINAL "G" ON PLUG PL-Q254 FOR 4000 OHM OUTPUT TO MATCH HIGH IMPEDANCE HEADPHONES.

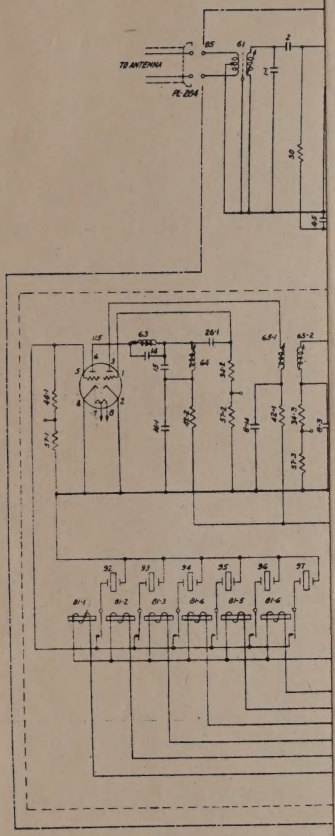
   CONNECT TERMINAL "G" ON PLUG PL-P256 OF RADIO CONTROL BOX BC-732-A TO TERMINAL "F" ON PLUG PL-Q254 FOR 300 OHM OUTPUT TO MATCH LOW IMPEDANCE HEADPHONES.

2. CONNECT TERMINAL "H" OF PLUG PL-P256 OF RADIO CONTROL BOX BC-732-A TO TERMINAL "H" OF PLUG PL-Q254 ON RECEIVER FOR 28 VOLT OPERATION.
   CONNECT TERMINAL "H" OF PLUG PL-P256 OF RADIO CONTROL BOX BC-732-A TO TERMINAL "C" OF PLUG PL-Q254 ON RECEIVER FOR 14 VOLT OPERATION.

3. RESISTOR RS-125 IS USED ONLY WHEN ONE INDICATOR I-101-C OR I-101-D IS INSTALLED.

Figure 11—Installation Cording Diagram

RESTRICTED

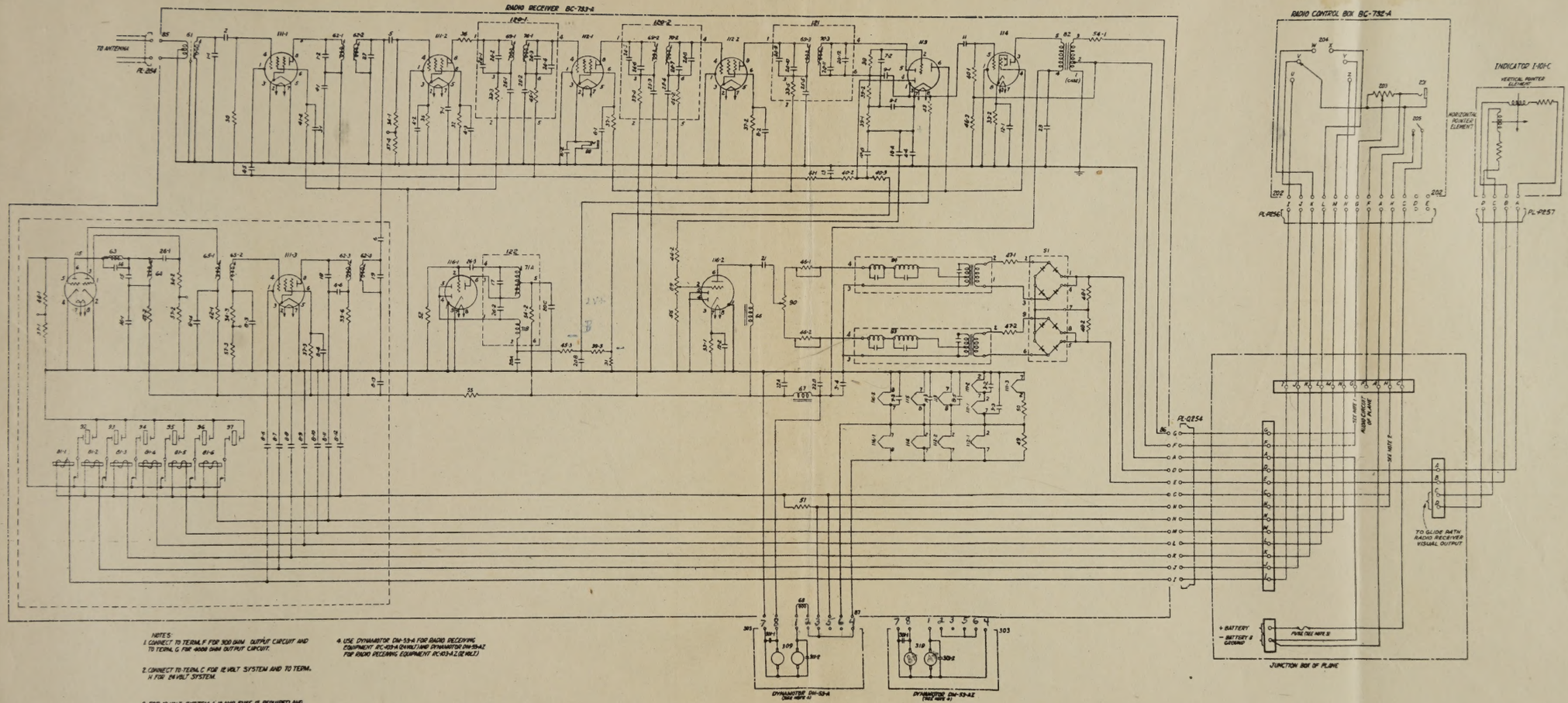


NOTES:
1. CONNECT TO TERM. F FOR 300 OHM
TO TERM. G FOR 4000 OHM OUTPUT C

2. CONNECT TO TERM. C FOR 12 VOLT SY
H FOR 24 VOLT SYSTEM.

3. FOR 12 VOLT SYSTEM A 10 AMP. FUSE
FOR A 24 VOLT SYSTEM A 5 AMP. FUS

IF - FREQU


RADIO RECEIVER BC-733-A
RADIO CONTROL BOX BC-732-A
INDICATOR I-101-C
VERTICAL POINTER ELEMENT
HORIZONTAL POINTER ELEMENT
TO ANTENNA
PL-254
PL-256
PL-257
PL-254
TO GLIDE PATH RADIO RECEIVER VISUAL OUTPUT
+ BATTERY
- BATTERY & GROUND
JUNCTION BOX OF PLANE
DYNAMOTOR DM-53-A
DYNAMOTOR DM-53-AZ
NOTES:
1. CONNECT TO TERM. F FOR 300 OHM OUTPUT CIRCUIT AND TO TERM. G FOR 4000 OHM OUTPUT CIRCUIT.
2. CONNECT TO TERM. C FOR 12 VOLT SYSTEM AND TO TERM. H FOR 24 VOLT SYSTEM.
3. FOR 12 VOLT SYSTEM A 10 AMP. FUSE IS REQUIRED AND FOR A 24 VOLT SYSTEM A 5 AMP. FUSE IS REQUIRED.
4. USE DYNAMOTOR DM-53-A FOR RADIO RECEIVING EQUIPMENT RC-103-A (6 VOLT) AND DYNAMOTOR DM-53-AZ FOR RADIO RECEIVING EQUIPMENT RC-103-AZ (12 VOLT)

IF- FREQUENCY 6.9 M.C.

BOTTOM VIEW OF DYN.

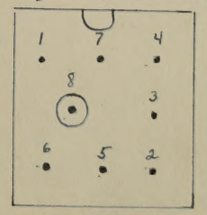


Fig. 6. Schematic Circuit Diagram of Radio Receiving Equipment RC-103-A and Radio Receiving Equipment RC-103-AZ